

photochromic material 2 returns to its original state when the ultraviolet light is no longer present.

[0026] In the absence of (sufficient) ultraviolet light, the photochromic material 2 is transparent or translucent (FIG. 2B, 5B). Light produced by an artificial visible light source 8 that does not contain any or sufficient ultraviolet light can therefore pass through the photochromic material 2.

[0027] In the presence of (sufficient) ultraviolet light, the photochromic material 2 is opaque (FIG. 2A, 5A) and absorbs ambient visible light.

[0028] Thus the photochromic material 2 when exposed to only artificial light 11, for example, as produced by the artificial light source 8 is translucent to the artificial light 11. Whereas when the photochromic material 2 is exposed to natural sunlight it absorbs the natural sunlight appearing dark.

[0029] Referring back to FIG. 1, this example of the apparatus 10 comprises an artificial visible light source 8 underlying a layer of photochromic material 2. The light source 8 does not produce ultraviolet light. A layer of paint 14 covers at least partially an upper surface of the photochromic layer 2. The paint layer 14 provides an additional filter for the visible light 11 when it passes through the photochromic layer 2, the paint layer 14 and the aperture(s) 6 (FIGS. 2B and 5B).

[0030] A layer of opaque material 4 overlies the paint layer 14. There are one or more apertures 6 through the layer of opaque material 4. The layer of opaque material 4, and the aperture(s) 6, are in this example covered by a transparent overcoat 12, however, in other examples there may be no overcoat present.

[0031] The paint layer 14 is positioned between and in contact with the layer of opaque material 4 and the layer of photochromic material 2. The paint layer 14 may be semi-transparent white or any other suitable color. It is positioned to be back-lit by the artificial visible light source 8. In other examples there may be no paint layer.

[0032] Referring back to FIG. 3, this example of the apparatus 10 comprises an artificial visible light source 8 underlying a substrate 16 that supports on an upper surface a layer of photochromic material 2. The light source 8 does not produce ultraviolet light.

[0033] The photochromic layer 2 is a paint layer. It is colored to provide additional filtering for the visible light 11 when it passes through the photochromic layer 2 and the aperture(s) 6 (FIGS. 2B and 5B).

[0034] A layer of opaque material 4 overlies the photochromic paint layer 2. There are one or more apertures 6 through the layer of opaque material 4. The layer of opaque material 4, and the aperture(s) 6, are covered by a transparent overcoat 12. In other examples there may be no overcoat.

[0035] The photochromic paint layer 2 is positioned between and in contact with the layer of opaque material 4 and the supporting substrate 16. The photochromic paint layer 2, when not exposed to ultraviolet light, may be semi-transparent white in the artificial visible light 11. It is positioned to be back-lit by the artificial visible light source 8.

[0036] It will be appreciated from the foregoing description of FIGS. 1, 2A, 2B, 3, 5A and 5B, that the apparatus 10 may be produced using a method of manufacture comprising: providing an artificial visible light source 8; providing a layer of photochromic material 2 as a filter for the artificial visible light 11 produced by the artificial light source 8; and providing a layer of opaque material 4, with one or more apertures 6 through the layer of opaque material 4, as a mask for the filtered artificial visible light 11.

[0037] FIG. 4 illustrates an example of a device 20 comprising one or more apparatuses 10. In this example, the device 20 is an electronic device with a user output 22 (e.g. a display) and a user input 26 (e.g. a key 24 or keys 24). In this example, the apparatus 10 provides a key 24 but in other example it may provide other functions and have different configurations. The information 5 presented by the apparatus 10 may indicate a function of the key 24. The artificial light source 8 may be a light emitting diode (or similar emissive device) or a light guide (or similar passive device).

[0038] The presentation of the information 5 changes in different ambient lighting conditions.

[0039] When the device 20 is exposed to sunlight, for example, the photochromic material 2 of the apparatus 10 changes state and absorbs at least some of the ambient sunlight making the aperture(s) 6 appear dark.

[0040] When the device 20 is not exposed to sunlight, for example, the photochromic material 2 of the apparatus 10 enables artificial light 11 from the artificial light source 8 to be transmitted through the aperture(s) 6.

[0041] The device 20 may, for example, be a mobile electronic device. It may, for example, be a hand-portable electronic device that is sized to be held in a palm of an adult human hand and to fit into an inside breast jacket pocket.

[0042] The device 20 may, for example, operate as one or more of a mobile cellular telephone, a personal media player, a navigation device, a camera device, a recording device, a data storage device, a personal digital assistant, a mobile computer etc.

[0043] Reference is made in this application to photochromic material 2. Known examples of photochromic material exist and are used, for example, in the production of light-reactive eyeglasses. Suitable examples of photochromic material 2 includes, but is not limited to, microcrystalline silver halides (e.g. silver halide) and organic photochromic molecules (e.g. oxazines and naphthopyrans).

[0044] Although embodiments of the present invention have been described in the preceding paragraphs with reference to various examples, it should be appreciated that modifications to the examples given can be made without departing from the scope of the invention as claimed.

[0045] Features described in the preceding description may be used in combinations other than the combinations explicitly described.

[0046] Although functions have been described with reference to certain features, those functions may be performable by other features whether described or not.

[0047] Although features have been described with reference to certain embodiments, those features may also be present in other embodiments whether described or not.

[0048] Whilst endeavoring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

1-18. (canceled)

19. An apparatus comprising:

an artificial visible light source;

a layer of photochromic material overlying the artificial light source;